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10/553,981	10/20/2005	Kayo Kamei	4255-23	8249
23117	7590	10/05/2009	EXAMINER	
NIXON & VANDERHYE, PC			PRIMO, ALLISTER O	
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ARLINGTON, VA 22203			ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/553,981	KAMEI ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	ALLISTER PRIMO	2854	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 19 June 2006.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1, 3-7, 9-23 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1, 3-7 and 9-23 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
     1. Certified copies of the priority documents have been received.  
     2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
     3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____ .
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ .	5) <input type="checkbox"/> Notice of Informal Patent Application
	6) <input type="checkbox"/> Other: _____ .

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1, 5-7, 9-11, 14 and 17 - 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tagawa (JP 11231730) in view of Masako (JP 2000313533.)

With respect to claims 1, 7, 9, 17 and 18, Tagawa discloses An image forming apparatus, provided with a paper feed cassette, 8, and an image forming portion, (11 and 14-15) that takes out a recording medium stored in this paper feed cassette sheet by sheet in response to an image forming request and performs image forming in the image forming portion, (11 and 14-15), a sheet quantity confirming means, (Tagawa, paragraphs [0061]-[0065], note although it is not clear from the machine translation what means Tagawa attributes to the described operations, such functions would

inherently require some type of computer processor) that can confirm the number of sheets of the recording medium stored in the paper feed cassette, 8; and a control means (again, it is not clear which actual structure Tagawa attributes to these processes, but some computer structure would be in control of this function) that causes the sheet quantity confirming means to confirm the number of sheets of the recording medium stored in the paper feed cassette when an image forming request has been made, and if the number of sheets of the recording medium stored in the paper feed cassette, 8, is lower than the number of sheets necessary to complete an image forming operation in accordance with the image forming request, the control means causes the user to be warned that the number of sheets of the recording medium is insufficient to complete the image forming operation in accordance with the image forming request, (described in the solution section); wherein the control wherein said image forming apparatus is configured to communicate with a terminal machine, (30 shown in figure 2): wherein said image forming apparatus has received said image forming request from said terminal machine, (30); and wherein said warning is provided at the terminal machine, (30); but doesn't not teach the image forming apparatus comprising: a push-out means that can push out the paper feed cassette from an installed state toward an uninstalled state relative to the main body of the image forming apparatus; and a control that causes the paper feed cassette to be pushed out from an installed state toward an uninstalled state by the push-out means without commencing the image forming operation.

Examiner would like to point out that Tawaga specifically states in the solution section that apparatus judges to see if sufficient paper is present for print job.

Masako discloses, in figure 2, a push-out means, (4), that can push out the paper feed cassette from an installed state toward an uninstalled state relative to the main body of the image forming apparatus; and a control, (cassette control, line 8 of solution section), that causes the paper feed cassette to be pushed out from an installed state toward an uninstalled state by the push-out means without commencing the image forming operation.

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the image forming apparatus disclosed by Tagawa to include the push out means taught by Masako for the purpose of automatically pushing out the sheet cassette when it has a insufficient amount of paper for a job.

With respect to claim 5, Tagawa as modified discloses the claimed invention, Masako further discloses (in drawing 2), an engaging mechanism, (push-out means 4), that can switch between an engaged state and a released state of the paper feed cassette relative to the main body of the image forming apparatus. (The solution section lines 3-6 also teaches, "engaging mechanism that can switch between an engaged state and a released state of the paper feed cassette relative to the main body of the apparatus" ) ; and a biasing portion, (spring 5), that confers a biasing force on the paper feed cassette in the push-out direction; and wherein when the number of sheets of the recording medium stored in the paper feed cassette is lower than the requested number

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of image forming sheets, the engaging mechanism puts the paper feed cassette in a released state relative to the main body of the apparatus, (solution section lines 7-13).

With respect to claim 6, Tawaga as modified further teaches, (Tawaga), wherein the control means, not shown, immediately after an image forming request has been received, causes the sheet quantity confirming means to confirm the number of sheets of the recording medium stored in the paper feed cassette, and if the number of sheets of the recording medium stored in the paper feed cassette is lower than the number of sheets requested by the image forming request, the control means causes the user to be warned that the number of sheets of the recording medium is insufficient, (described in the solution section), Masako further teaches the paper feed cassette, (1), to be pushed out from an installed state toward an uninstalled state by the push-out means, (4), without commencing the image forming operation, taught in solution section of Tawaga.

With respect to claim 10, the method is necessitated by the structure disclosed in claim 9 above. The structure disclosed by Tagawa as modified is capable of carrying out the recited functions.

With respect to claim 11, the method is necessitated by the structure disclosed in claim 9 above. The structure disclosed by Tawaga as modified is capable of carrying out the recited functions.

With respect to claim 14, Tagawa further discloses that the warning is "displayed" (paragraph [0065]) thus the warning must be visual.

With respect to claim 19, Tagawa as modified further discloses that the device further comprising a warning means (Tagawa, paragraph [0065]), configured to emit a warning that the number of sheets of the recording medium is insufficient to complete the image forming operation in accordance with the image forming request, described in the solution section.

With respect to claim 20, Tagawa as modified further discloses wherein said image forming request is the result of a first work of a user at said terminal machine, (30 shown in figure 2);

Examiner would like to point of that since a warning message appears before commencement of a first work when there are insufficient papers, then it must inherently appear before a second work since the second work happens after the first warning.

With respect to claim 21, Tagawa as modified further discloses wherein said image forming request is the result of a first work of a user at said terminal machine, (30 shown in figure 2);

Examiner would like to point of that since a warning message appears before commencement of a first work when there are insufficient papers, then it must inherently appear before a second work since the second work happens after the first warning.

With respect to claim 22, Tagawa as modified further discloses wherein said image forming apparatus is further configured to withhold said commencement of said image forming job by switching between an engaged state and a released state of the paper feed cassette, described in Solution section of.

Examiner would like to point that , Masako teaches an engaging mechanism, 4, that can switch between an engaged state and a released state of the paper feed cassette relative to the main body of the apparatus, in the solution section lines 3-6. Since it would be impossible to continue print when the paper cassette is not in the installed position the devices as disclosed by Tagawa is capable of carrying out all recited functionality.

With respect to claim 23, the method is necessitated by the structure disclosed in claim 22 above. The structure disclosed by Tagawa as modified is capable of carrying out the recited functions.

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1. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tagawa in view of Masako, as applied to claim 1 above, and further in view of Fukuda (JP 57-160844).

With respect to claim 3 Tagawa as modified discloses the claimed invention except for the paper storage board that supports a recording medium and moves to a lower position as the number of stored sheets of the recording medium increases; wherein the sheet quantity confirming means confirms the number of sheets of the I recording medium stored in the paper feed cassette by detecting a height position of the paper storage board with a reflective optical sensor.

Fukuda discloses in figure 2 an image forming device comprising a paper storage board, (2), that supports a recording medium and moves to a lower position as the number of stored sheets of the recording medium increases; wherein the sheet quantity confirming means, (9 and 10), confirms the number of sheets of the I recording medium stored in the paper feed cassette by detecting a height position of the paper storage board, (2), with a reflective optical sensor, (10.)

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the image forming apparatus disclosed by Tagawa in view of Masako with the teaching of Fukuda for the purpose of digitally indicating the remaining amount of sheets.

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2. Claims 4 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tagawa and Masako, as applied to claims 1 and 7 above, and further in view of Nobusuke (JP 2000-335784).

With respect to claims 4 and 13 Tagawa discloses the claimed image forming apparatus except for a metal portion of said paper feed cassette that extends in the vertical direction along an edge of said one or more paper sheets contained in said paper feed cassette; a movable paper storage board supporting said one or more paper sheets, wherein a position of the paper storage board is dependant upon the number of paper sheets contained in said paper feed cassette; wherein said paper storage board comprises metal and is movable along said portion in the vertical direction while contacting said portion; wherein electrical resistance between the paper storage board and said metal portion is dependant upon a height position of the paper storage board; and wherein said paper sheet quantifier is configured to permit a current flow from the paper storage board to said metal portion and to confirm the number of paper sheets contained in the paper feed cassette based on electrical resistance from the paper storage board to said metal portion.

Nobusuke teaches (in solution section of the abstract) a metal portion, (9), of said paper feed cassette that extends in the vertical direction along an edge of said one or more paper sheets contained in said paper feed cassette; a movable paper storage, (2), board supporting said one or more paper sheets, wherein a position of the paper storage board is dependant upon the number of paper sheets contained in said paper feed cassette; wherein said paper storage board comprises metal and is movable along

said portion in the vertical direction while contacting said portion; wherein electrical resistance between the paper storage board, (2), and said metal portion, (9), is dependant upon a height position of the paper storage board, (2); and wherein said paper sheet quantifier is configured to permit a current flow from the paper storage board to said metal portion and to confirm the number of paper sheets contained in the paper feed cassette based on electrical resistance from the paper storage board to said metal portion, described in solution section lines 4-9.

It would be obvious to one having ordinary skill in the art at the time of the invention to combine the image forming apparatus disclosed Tagawa as modified with the teaching of Nobusuke for the purpose of making an emptied state visually recognizable when no paper is present in the paper feed cassette.

3. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tagawa and Masako, as applied to claim 9 above, and further in view of Fukuda (JP 57-160844).

With respect to claim 12, Tagawa as modified discloses the claimed invention except wherein: said paper feed cassette comprises a movable paper storage board supporting said one or more paper sheets, wherein a position of the paper storage board is dependant upon the number of paper sheets contained in said paper feed cassette; wherein said paper sheet quantifier comprises a reflective optical sensor configured to detect a height of said paper storage board; wherein said reflective optical

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sensor comprises a light emitter and a light receiver; wherein said light emitter is configured to emit light to be reflected from said paper storage board to said light receiver.

Fukuda discloses in figure 2, a paper feed cassette comprises a movable paper storage board, (2), supporting said one or more paper sheets, wherein a position of the paper storage board is dependant upon the number of paper sheets contained in said paper feed cassette; wherein said paper sheet quantifier comprises a reflective optical sensor configured to detect a height of said paper storage board, described in constitution section; wherein said reflective optical sensor comprises a light emitter, (9), and a light receiver, (10) ; wherein said light emitter, (9) is configured to emit light to be reflected from said paper storage board, (2), to said light receiver, (10), describe in the constitution section.

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the image forming apparatus disclosed by Tagawa with the teaching of Fukuda for the purpose of digitally indicating the remaining amount of sheets.

4. Claims 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tagawa and Masako, as applied to claim 7 above, and further in view of Aoki (US 6726197).

With respect to claim 15-16, Tagawa disclose the claimed image forming apparatus except for the auditory warning.

However, Aoki teaches wherein said warning comprises a visual and an auditory warning, described in column 6 lines 59 – 65.

It would have been obvious to one having ordinary skill in the art at the time of the invention to combine the teaching of Aoki with the image forming apparatus disclosed by Tagawa as modified for the advantage of including a warning for those who have difficulty seeing or cannot see.

***Response to Arguments***

4. Applicant's arguments with respect to claims 1, 7, 9 and 10 have been considered but are moot in view of the new ground(s) of rejection.

5. Applicant's arguments filed on 06/19/2009 have been fully considered but they are not persuasive.

With respect to claims 4 and 13, Applicant argues that, "the sheet residual quantity detection part is outside of the sheet cassette and does not extend along the edge of the sheets," which is not persuasive. Applicant does not explicitly claim this sheet residual quantity detection structure to be inside of the paper feed cassette but merely say it is a part of the paper feed cassette therefore the rejection is deemed proper.

With respect to claims 11, 22 and 23, Applicant argues that Masko does not teach withholding commencement of a image forming job, also that Masko does not teach and

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engage or release state. This is not persuasive since, Masako teaches a push out means 4 that pushes the tray out to a released state, (therefore there must be an installed state) and the control of Tawaga would read on the functionality of with holding commencement of the job up detection of an insufficient sheet amount therefore causing a warning. Since the controller of Tawaga already detects an emptied state, and the push out device as Masako pushes out up the detection of an emptied state, Masako as modified is capable of carrying out recited function and the rejection is deemed proper.

With respect to claims 15 and 16, Applicant argues that Akoi (US 6726197), does not teach both a visual and auditory warning. This is not persuasive since Column 6 lines 59 – 65 of Akoi explicitly teaches a video (visual) alarm message and an audio alarm speech, therefore the rejection is deemed proper.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALLISTER PRIMO whose telephone number is (571)270-5069. The examiner can normally be reached on M - F 9 - 6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy NGUYEN can be reached on (571) 272 - 2258. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AP

/Judy Nguyen/  
Supervisory Patent Examiner, Art Unit 2854